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USATHAMA

U.S. Army Toxic and Hazardous Materials Agency

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Enhanced Preliminary Assessment Report:

Dorseyville Army Housing Units Dorseyville, Pennsylvania

October 1989

prepared for

Commander
U.S. Army Toxic and Hazardous Materials Agency
Aberdeen Proving Ground, Maryland 21010-5401

prepared by

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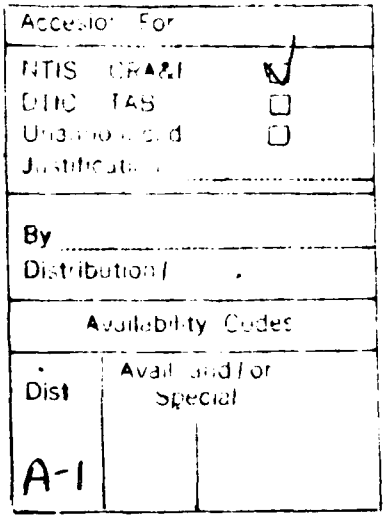

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Argonne National Laboratory has conducted an enhanced preliminary assessment of the Army housing property located in Dorseyville, PA. The objectives of this assessment include identifying and characterizing all environmentally significant operations, identifying areas of environmental contamination that may require immediate remedial actions, identifying other actions which may be necessary to resolve all identified environmental problems, and identifying other environmental concerns that may present impediments to the expeditious sale of this property. Keywords: Underground Storage Tanks, Petroleum, Soils, Waste Disposal, contd

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SUMMARY

The Dorseyville housing facility located in Dorseyville, Pa., does not represent any imminent or substantial threat to human health or the environment. There is no evidence to suggest that hazardous or toxic constituents have ever been released from this property.

This property was originally developed in conjunction with a Nike missile battery located in Dorseyville, Pa. However, no wastes associated with the operation and maintenance of the missile and tracking systems have ever been delivered to or disposed of at this housing property. Furthermore, this housing property existed independently of the missile launcher area and integrated fire control portions of the battery with respect to water, sewer, or electrical utilities. No Nike-related wastes were delivered to this property for management or disposal.

No actions are recommended prior to the release of this property. The conclusion assumes that this property will continue to be used for residential housing.

1 INTRODUCTION

In October 1988, Congress passed the Defense Authorization Amendments and Base Closure and Realignment Act, Public Law 100-526. This legislation provided the framework for making decisions about military base closures and realignments. The overall objective of the legislation is to close and realign bases so as to maximize savings without impairing the Army's overall military mission. In December 1988, the Defense Secretary's ad hoc Commission on Base Realignment and Closure issued its final report nominating candidate installations. The Commission's recommendations, subsequently approved by Congress, affect 111 Army installations, of which 81 are to be closed. Among the affected installations are 53 military housing areas, including the Dorseyville housing area addressed in this preliminary assessment.[1]

Legislative directives require that all base closures and realignments be performed in accordance with applicable provisions of the National Environmental Policy Act (NEPA). As a result, NEPA documentation is being prepared for all properties scheduled to be closed or realigned. The newly formed Base Closure Division of the U.S. Army Toxic and Hazardous Materials Agency is responsible for supervising the preliminary assessment effort for all affected properties. These USATHAMA assessments will subsequently be incorporated into the NEPA documentation being prepared for the properties.

This document is a report of the enhanced preliminary assessment (PA) conducted by Argonne National Laboratory (ANL) at the Army stand-alone housing area in Dorseyville, Pa.

1.1 AUTHORITY FOR THE PA

The USATHAMA has engaged ANL to support the Base Closure Program by assessing the environmental quality of the installations proposed for closure or realignment. Preliminary assessments are being conducted under the authority of the Defense Department's Installation Restoration Program (IRP); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Public Law 91-510, also known as Superfund; the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499; and the Defense Authorization Amendments and Base Closure and Realignment Act of 1988, Public Law 100-526.

In conducting preliminary assessments, ANL has followed the methodologies and procedures outlined in Phase I of the IRP. Consequently, this PA addresses all documented or suspected incidents of actual or potential release of hazardous or toxic constituents to the environment.

In addition, this PA is "enhanced" to cover topics not normally addressed in a Phase I preliminary assessment. Specifically, this assessment considers and evaluates the following topical areas and issues:

- Status with respect to regulatory compliance,
- Asbestos,
- Polychlorinated biphenyls (PCBs),
- Radon hazards (to be assessed and reported on independently),
- Underground storage tanks,
- Current or potential restraints on facility utilization,
- Environmental issues requiring resolution,
- Health-risk perspectives associated with residential land use, and
- Other environmental concerns that might present impediments to the expeditious "excessing," or transfer and/or release, of federally owned property.

1.2 OBJECTIVES

This enhanced PA is based on existing information from Army housing records of initial property acquisition, initial construction, and major renovations and remodeling performed by local contractors or by the Army Corps of Engineers. The PA effort does not include the generation of new data. The objectives of the PA include:

- Identifying and characterizing all environmentally significant operations (ESOs),
- Identifying property areas or ESOs that may require a site investigation,
- Identifying ESOs or areas of environmental contamination that may require immediate remedial action,
- Identifying other actions that may be necessary to address and resolve all identified environmental problems, and
- Identifying other environmental concerns that may present impediments to the expeditious transfer of this property.

1.3 PROCEDURES

The PA began with a review of Army housing records located at the Charles E. Kelly Support Facility, Oakdale, Pa., the week of July 16-19, 1989. Additional information was obtained from the Army Corps of Engineers District Office, DEH Division, Building S-630052 near Oakdale, Pa., on July 17. A site visit was conducted at the Dorseyville housing area on July 19, 1989, at which time additional information was obtained through personal observations of ANL investigators. Photographs were taken of the housing units and surrounding properties as a means of documenting the condition of the housing units and immediate land uses. Site photographs are appended.

All available information was evaluated with respect to actual or potential releases to air, soil, and surface and ground waters.

Access to one of the individual housing units was obtained through the senior occupant at the facility. In addition, ANL investigators revisited the property on September 13, 1989, at which time the interiors of all of the units were inspected.

2 PROPERTY CHARACTERIZATION

2.1 GENERAL PROPERTY INFORMATION

The Dorseyville housing units are located in southwest Pennsylvania, in the town of Dorseyville, County of Allegheny. The entire property area is 11.48 acres, with a 2.66-acre easement.[2] The town of Dorseyville had a 1984 population estimate of less than 800.[3] Figures 1 and 2 show the general location of the facility.[4] The housing units were constructed in 1959.[5] No additional major construction has taken place on the property since that time.[6] The Army Corps of Engineers for the Oakdale area, southwest of Pittsburgh, is responsible for major renovations or upgrading within the area.

Figures 1 and 2 show the general location of the facility.

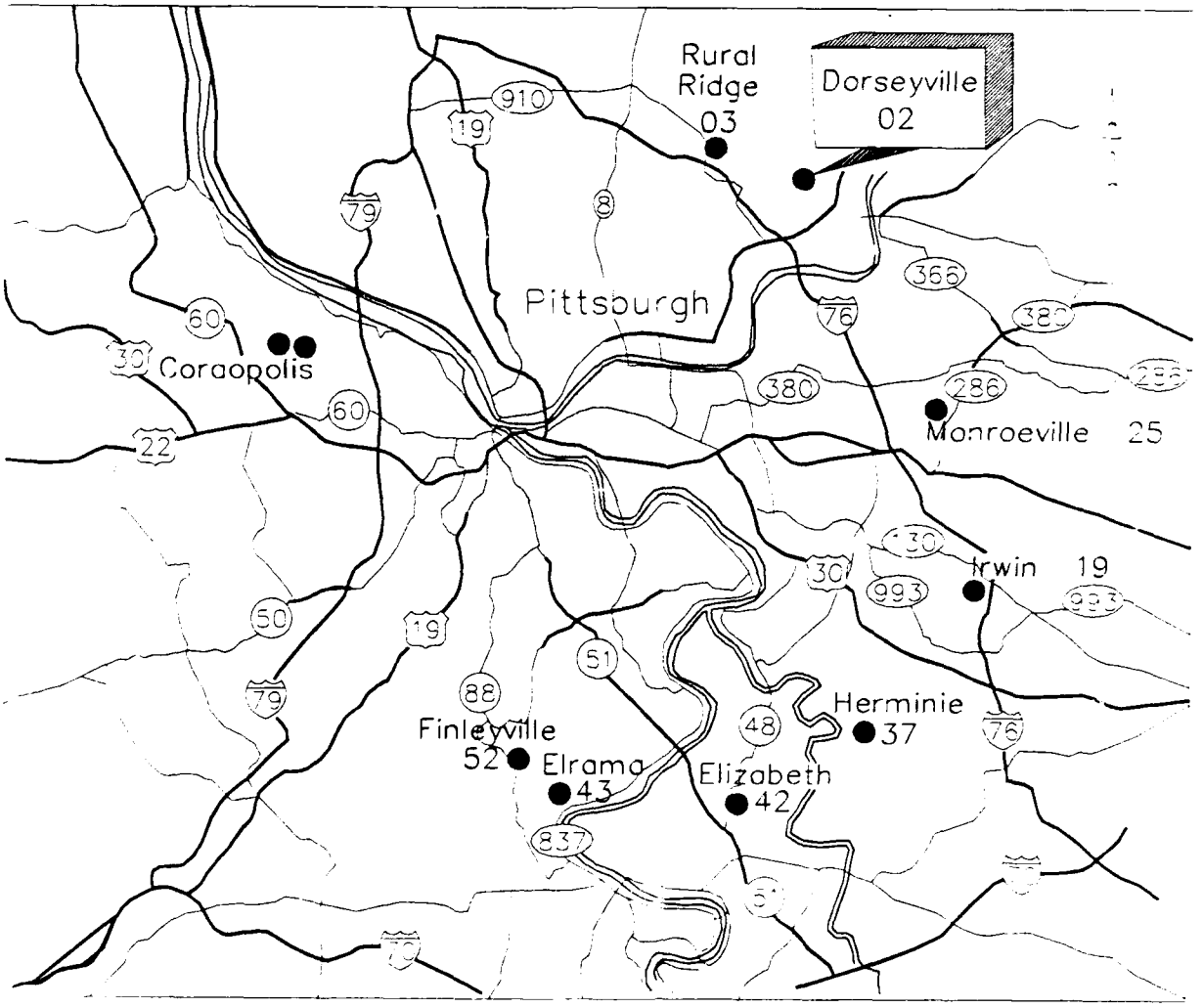

FIGURE 1 Location Map of Pennsylvania Army Housing Facilities

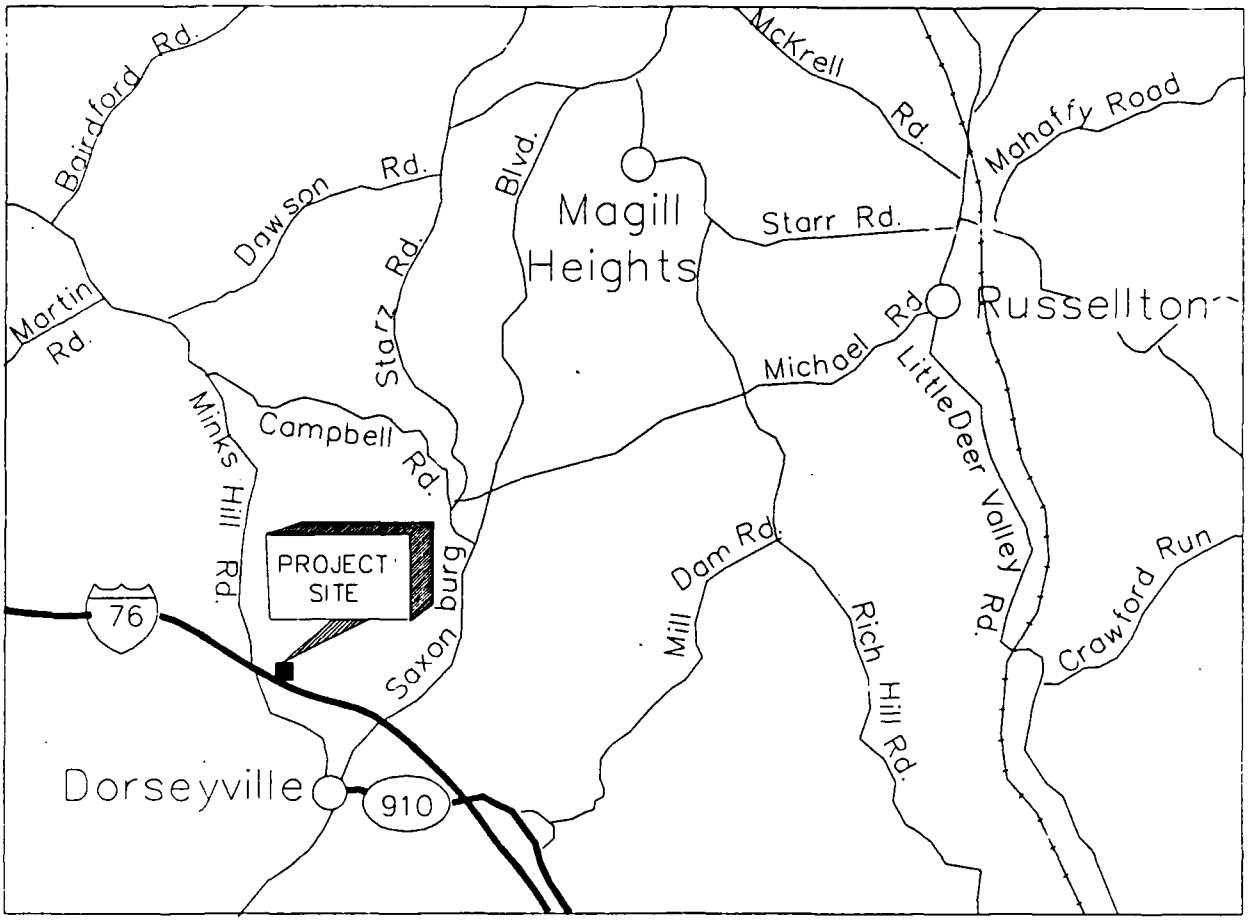

FIGURE 2 Vicinity Map of Dorseyville Army Housing Units

2.2 DESCRIPTION OF FACILITY

Figure 3 presents the site plan of the housing property.

Housing Units

The Dorseyville housing area consists of 16 three-bedroom "Capehart"-style family units, with a paved carport for each house. Capehart is a model name of the builder, National Homes. The houses are built on concrete slabs with no structures underground.[5] Water, gas, and sewer lines are imbedded into the foundation slab. The houses contain asbestos shake siding and asphalt shingle covered roofs. The houses are supplied with fenced concrete patios. The houses have asphalt floor tile with drywall ceilings and walls, gas forced-air heat, and 40-gallon hot water heaters. They also have storm windows and screens. The houses have two entrances with screen doors front and side. Each unit has a 5-foot-by-9-foot exterior storage room, two garbage receptacles,

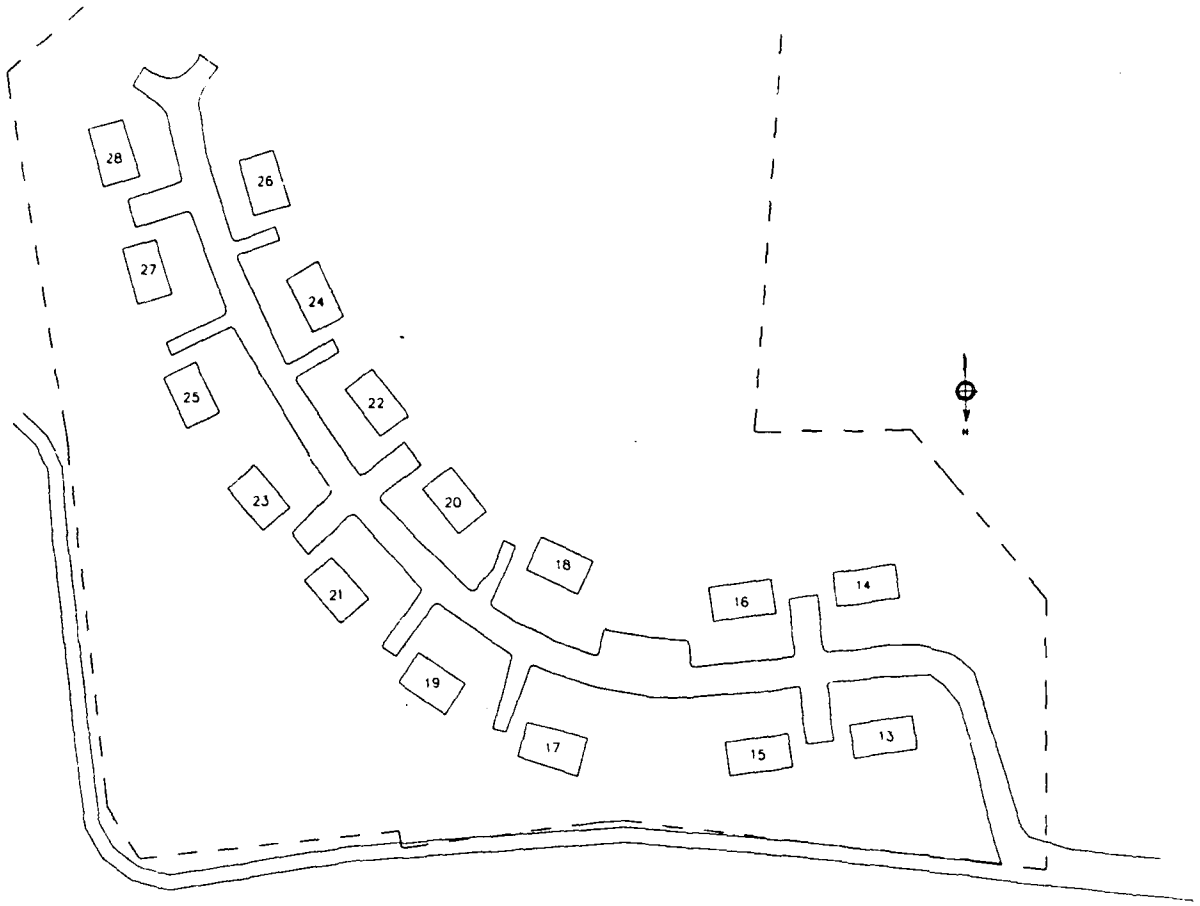

FIGURE 3 Site Plan Map of Dorseyville Army Housing Units

clothesline hooks, and a kitchen range. Five houses have floor areas of 1,181 square feet; 11 houses have areas of 1,131 square feet.

Utilities

Since development of the property, the housing units have been supplied with city water; there are no drinking water wells on the property. The property is supplied with city power and all telephone poles and transformers on site are the responsibility of Duquesne Light Co. Natural gas is supplied by Peoples Gas Co. Water is supplied by the Municipal Authority Borough of Oakmont. There are two fire hydrants on the site. The sanitary waste is handled by the Deer Creek Drainage Basin Authority.

Sewage

Each housing unit is connected to a common sewage line operated by the Deer Creek Drainage Basin Authority. Sewage treatment was originally accomplished by means of an on-site facility consisting of sand filters and a septic tank. The date of the

changeover to the Deer Creek Drainage system is unknown. The old sanitary sewer collection system, located in the southeast portion of the property, was abandoned in place.

Storm Drainage Systems

Storm water is removed from the property by open ditches or surface runoff through a swale running along the north edge of the site to a small creek. There are also catch basins with 15-inch tiles leading to two headwalls southeast of the site. The property is not prone to flooding.

Other Permanent Structures or Property Improvements

The site has a city-owned water tower that is located north of the center of the property. At the far southeast side of the site there is a gas meter house. There is a large area playground located near the center of the complex on the south side.

2.3 PROPERTY HISTORY

2.3.1 Nike Defense Program and Typical Battery-Level Practices

Generic information on the national Nike antiaircraft defense program has been compiled in two studies, one commissioned by the Army Corps of Engineers[7] and the other by the U.S. Army Toxic and Hazardous Materials Agency.[8] In both studies, independent contractors relied on information contained in unclassified documents related to the Nike surface-to-air missile program, including engineering drawings and specifications (for the facilities and the missiles themselves), interviews with Army personnel participating in the Nike program, and operations manuals and directives relating to the operations and maintenance of Nike facilities. Taken together, these two reports represent the most complete assemblage of generic information on the Nike missile program from an environmental perspective. Salient points from both reports are condensed below.

At its zenith in the early 1960s, the Nike program included 291 batteries located throughout the continental United States. The program was completely phased out by 1976, with many of the properties sold to private concerns or excessed to state or local governments for nominal fees.

Nike Ajax missiles were first deployed in 1954 at installations throughout the continental United States, replacing, or in some cases augmenting, conventional artillery batteries and providing protection from aerial attack for strategic resources and population centers. Typically, Nike batteries were located in rural areas encircling the protected area. The Ajax was a two-stage missile using a solid-fuel booster rocket and a liquid-fuel sustainer motor to deliver a warhead to airborne targets.

The Ajax missile was gradually replaced by the Nike Hercules missile, introduced in 1958. Like the Ajax, the Hercules was a two-stage missile, but it differed from the Ajax in that its second stage was a solid-fuel rather than liquid-fuel power source and its payload often was a nuclear rather than conventional warhead. Ajax-to-Hercules conversions occurred between 1958 and 1961 and required little change in existing Nike battery facilities. A third-generation missile, the Zeus, was phased out during development and consequently was never deployed.

A typical Nike missile battery consisted of two distinct and separate operating units, the launch operations and the integrated fire control (IFC) operations. The two operating areas were separated by distances of less than two miles, with lines of sight between them for communications purposes. A third separate area was also sometimes part of the battery. This area was typically equidistant from the two battery operating sites and contained housing for married personnel assigned to the battery. Occasionally, these housing areas also contained battalion headquarters, which were responsible for a number of Nike batteries.

Depending on area characteristics and convenience, the housing areas were often reliant on the launch or IFC sites for utilities such as potable water, electrical power, and sewage treatment. In those instances, buried utility lines connected the housing area to one or both of the other battery properties. It is also possible, however, that housing areas were completely independent of the missile launcher and tracking operations. In those instances, the necessary utilities were either maintained on the housing site or purchased from the local community. In many localities, as the character of the land area around the housing units changed from rural to suburban or urban, communities extended utility services to the housing unit locations, in which case conversions from independent systems to community systems were made.

A large variety of wastes was associated with the operation and maintenance of Nike missile batteries. Normally encountered wastes included benzene, carbon tetrachloride, chromium and lead (contained in paints and protective coatings), petroleum hydrocarbons, perchloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, and trichloroethylene. Because of the rural locations of these batteries, and also because very few regulatory controls existed at that time, most of these wastes were managed "on-site." (Unused rocket propellants and explosives, however, would always have been returned to central supply depots and not disposed of on-site.) It is further conceivable that wastes generated at one of the Nike properties may have been transferred to its companion property for management or disposal.

Wastes related to missile operation and maintenance would not have been purposely transferred from a battery operating area to a housing area with no facilities for waste management or disposal. In some instances, however, the sewage treatment facilities for all Nike battery properties were located at the housing area; that possibility cannot be automatically ignored. Finally, where housing areas received various utilities from either of the operating areas, it is also possible that wastes disposed of on those other properties may have migrated to the housing area via the buried utility lines. And since decommissioning of the Nike batteries did not normally involve removal of buried utility or communication lines, any such contaminant migration is likely to have gone unnoticed.

2.3.2 Dorseyville Housing Units

The Dorseyville housing area was built in 1959 to provide family housing for military personnel assigned to the Dorseyville Nike battery. Although this housing area was originally developed to support a Nike battery, there is no evidence that Nike missile-related wastes were ever delivered to or managed at this property. Furthermore, since its original construction, this housing area operated independently of the Nike battery with respect to water, sewer, and electrical utilities.

Sixteen single-family houses were erected on the property. Other property improvements included the installation of concrete patios and driveways and carports. Smoke and heat detectors have been installed. The floor areas of the houses are as follows; five units have 1,181 square feet, the rest of units have 1,131 square feet. The interior of unit #16, currently vacant, was inspected during the site visit on July 17. The asphalt floor tiles, which may contain asbestos, were in good condition. Inspections on September 13, 1989, revealed that there was no insulation whatsoever in the water pipes. No other insulating materials could be found. Since the initial property development in 1959, no other permanent structures been added, and none of the original structures has been razed.

2.4 ENVIRONMENTAL SETTING AND SURROUNDING LAND USE

The Dorseyville housing facility is located on the side of a low hill. There is a single curved street with nine units on the north side and seven units on the south side. The terrain slopes gently to the south from the road for about 150 feet, then it drops off very sharply to a valley running north and south. This valley area is covered with large trees and heavy undergrowth.

West of the site the terrain is rolling hills with residential sites along Meyers Lane. The site has natural storm drainage run off to the south. To the east side are more rolling hills and the town of Dorseyville. The north property boundary, the highest point of the site, is adjacent to the launch area of the former Dorseyville Nike battery. The climate is generally mild with a mean temperature of 56 degrees. Average annual rain fall is 40 inches. The soils, which are deep and well drained, are Piedmont type with some Coastal Plain influence. Subsoils are friable clay.

2.5 GEOLOGIC AND HYDROLOGIC SETTINGS

The Dorseyville housing area is located in the northern part of the Eastern Coal Province in the lower Allegheny River Basin; this basin covers an area of 4,077 miles.[9] The Eastern Coal Province is divided into 24 hydrologic reporting areas. The divisions are based upon hydrologic factors, location, size, and mining activity. Hydrologic units or parts of units are combined to form each area. Area 3 is located in the northern part of the Eastern Coal Province in which Dorseyville is a part.

The area, which includes parts or all of Jefferson, Clearfield, Armstrong, Butler, Allegheny, Cambria, Indiana, Somerset, and Westmoreland Counties, lies within the

Allegheny River Basin, and includes parts of the Monongahela, Allegheny, Pottsville, and Conemaugh coal fields.

Major streams in the area in addition to the Allegheny River are the Kiskiminetas River and the Redbank, Mahoning, Crooked, and Buffalo creeks. Area 3 is in the Appalachian Plateaus Physiographic Province. The rock types in the area are predominantly sandstone and shale containing thin beds of limestone and coal. The rocks are divided into six stratigraphic units, four in the Pennsylvanian System and two in the Mississippian System. The stratigraphic order of the rock units from youngest to oldest are: the Monongahela Formation, Conemaugh Formation, Allegheny Group, and Pottsville Group of Pennsylvanian age; and the Mauch Chunk Formation and Pocono Group of Mississippian age. Coal beds and limestone are common in the Pennsylvanian System. The area has a humid continental type climate. Mean rainfall in the area ranges from 36 to 48 inches. Ground water levels are usually lowest during September to November with the lowest levels occurring around the beginning of October. Surface drainage through the area includes an additional drainage from 7,671 square miles of the Allegheny River Basin.

The area is underlain by the Monongahela, Allegheny, Pottsville, and Conemaugh coal fields. The Conemaugh and Allegheny are the most extensive. Coal production in the Area 3 counties increased from 46,200,000 tons in 1974 to 53,000,000 tons in 1977, but production dropped to about 50,000,000 tons in 1978.

3 ENVIRONMENTALLY SIGNIFICANT OPERATIONS

3.1 SEWER SYSTEM

Originally, sewage was treated on-site in a facility consisting of sand filters and a septic tank. No problems resulting from the operation of this facility have been documented. The system had been abandoned in place when the housing units were connected to the Dorseyville municipal system. The Dorseyville housing site is located in an area with very well-drained soil, and the area is not subject to flooding.

3.2 POLE-MOUNTED TRANSFORMERS

There is one pole-mounted transformer that services the housing site located in Dorseyville. The transformer is owned and operated by the Duquesne Light Co. It is not known whether this transformer contains PCBs. No evidence of spills or leaks was observed during the site visit.

3.3 ASPHALT CONSTRUCTION MATERIALS

Real estate records indicate that the housing units all contain asphalt floor tiles that contain asbestos. These floor tiles were all in good condition. No insulation was found on the water pipes. No other insulating materials could be found.

4 KNOWN AND SUSPECTED RELEASES

Because of the fully residential nature of the facility, no major releases or adverse impacts to the environment have occurred at the Dorseyville housing area. No known hazardous wastes have ever been present at the property.

5 PRELIMINARY ASSESSMENT CONCLUSIONS

Although these housing units were originally developed in support of a Nike missile battery, all available documentation and circumstantial evidence indicate the fully independent operation of this housing property from other Nike battery activities. No Nike-related wastes were delivered to this property for management or disposal. Furthermore, since this property was independent of the Nike missile operations with respect to all necessary utilities, there is no possibility of migration of Nike-related wastes along buried utility lines.

Real property records indicate that asbestos-containing asphalt tiles were used in all housing construction at this property. These floor tiles are all in good condition and do not constitute an environmental threat.

No problems have been documented for the abandoned sewage treatment plant on the site. However, no details of the plant's abandonment could be located.

6 RECOMMENDATIONS

The Dorseyville housing facility does not represent any imminent or substantial threat to human health or the environment. There is no evidence to suggest that hazardous or toxic constituents have ever been released from this property.

No actions are necessary prior to release of this property. The conclusion assumes that this property will continue to be used for residential housing.

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9. Herb, W.J., et al., *Hydrology of Area 3, Eastern Coal Province, Pennsylvania*, U.S. Geologic Survey, Water Resources Investigations Open File Report 81-538, (Sept. 1981).

APPENDIX:

PHOTOGRAPHS OF DORSEYVILLE HOUSING FACILITY AND SURROUNDING LAND

1

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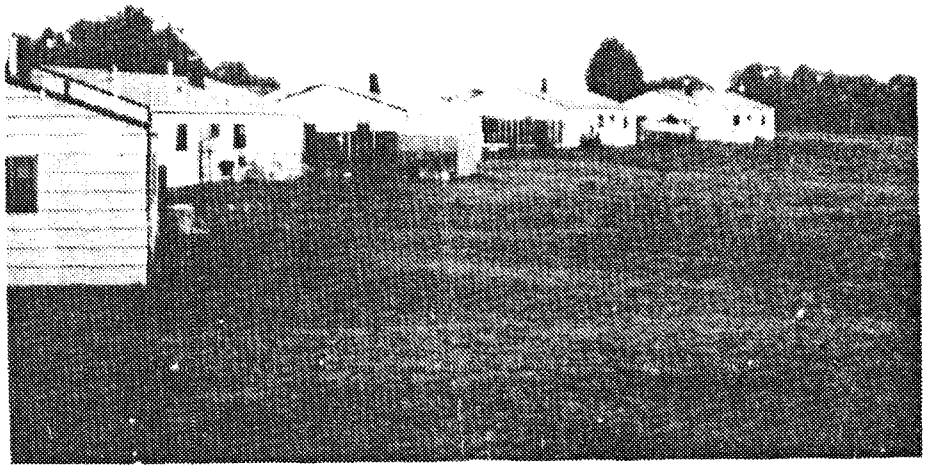

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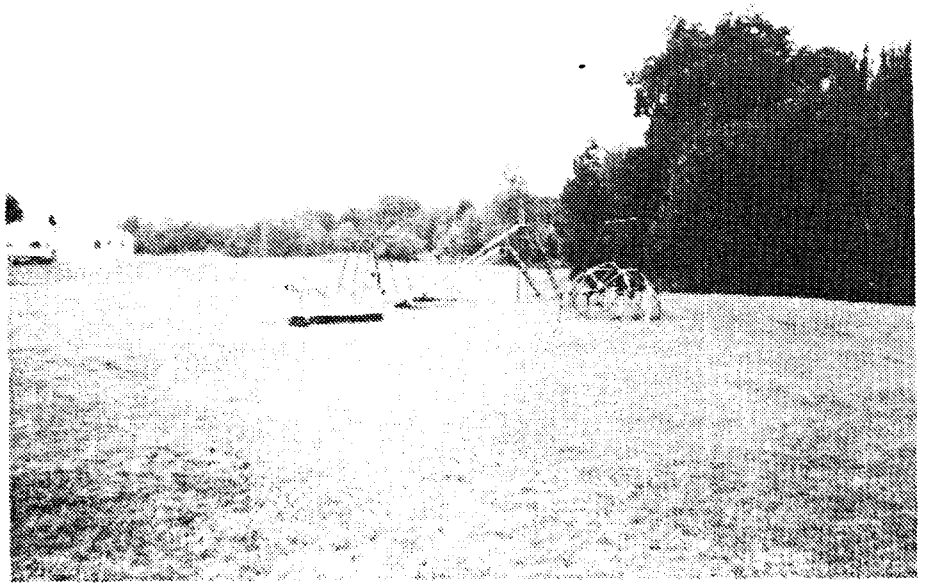

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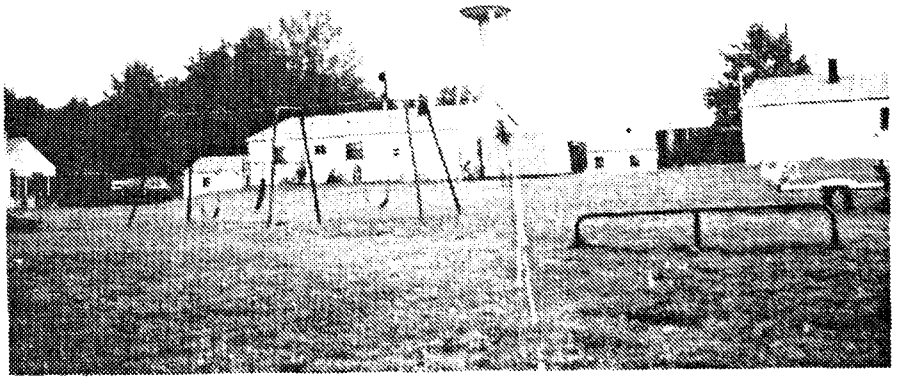

IDENTIFICATIONS OF PHOTOGRAPHS

1. A view of the housing area looking from the east.
2. Rear view of the houses.
3. Play area for children.
4. A city water tower in the background.